## NORTH AMERICAN TECHNOLOGY AND INDUSTRIAL BASE ORGANIZATION

### **NATIBO**

## Operations & 3 Year Business Plan



Revision: May 2007

. . . A Forum for Cooperation



### **Outline**

- Background
- Organization
- NATIBO Products & Services
  - Memorandum of Understanding
  - Studies & Assessments
  - Advocacy Activities
- Work Plans
- Summary

A Forum for



# Forum for

### Background

- Joint Canadian DND US DoD organization
- Based on 1985 "Shamrock Summit" pledge by President Reagan and Prime Minister Mulroney
- 1987 NATIBO Charter with 1994, 1997 revisions
  - "promote...and...execute...DoD and DND technology and industrial base programs and policies"
  - "foster cooperation...in development of coordinated technology and IB policies...that promote the integration of the defense and commercial industrial sector"
  - "ensure that North American technology and IB considerations are taken into account during US or Canadian military or civilian planning emergencies





### **Mission**

In support of North American national security, the NATIBO facilitates technology and industrial base efforts between the U.S. and Canadian Defense Departments



### Background

- NATIB Memorandum of Understanding (MOU) signed May 2001
- Covers NATIBO Activities
  - Coordination of technology & industrial base activities
  - Development and evaluation of demonstrators/prototypes
  - Integration of defense & commercial industrial sectors
  - Technology insertion and industrial base data projects
  - Studies/Assessments
- Facilitates Information Exchange, Working Groups and Project Arrangements
  - MOU allows assignment of Cooperative Project Personnel and contracting on behalf of the other nation



## Organization Steering Committee

### Appointment

- "Each Participant in the NATIBO MOU will appoint its national Steering Committee (SC) Co-Chair"
- "Each Participant (through its MOU Co-Chair) will select members of the NATIBO MOU SC"

### Responsibilities

- Meet no less than annually
- Approval authority for Working Groups and Project Arrangements under the NATIBO MOU
- Advocacy and education
- Developing MOU processes, monitoring their effectiveness and recommending/implementing improvements

### Resources

Personnel are assigned (no dedicated support)
No budgeted funding line in place (funding provided by participants on a project-by-project basis



## **Organization Steering Committee - Principals**

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### Canada

Co-Chair: DND (DG International & Industry Programs)
U.S

Co-Chair: USD(AT&L), Office of Technology Transition

**Army** 

Navy

**Air Force** 

**Marine Corps** 

**Missile Defense Agency** 

**Defense Logistics Agency** 

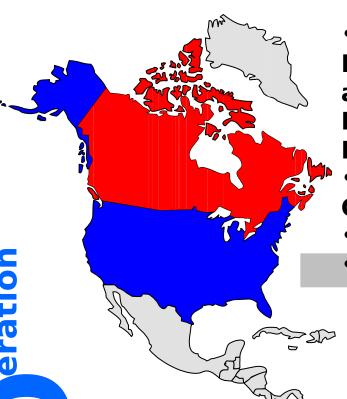
**DCMA** 



## Organization **Steering Committee - Observers**

### Canada





- DND: Canadian Defense Liaison Staff (Washington) and Director Industry Relations, Analysis and Policy/DGIIP
- Technology Partnership
   Canada
- Industry Canada
- ்டு agadian Commercial Corp.
- DHS
- Department of Commerce
- USD(AT&L), International Cooperation



## Organization **Secretariat**

### Appointment

- Selected by both Participants in support of the NATIBO MOU
- US ECBC has been NATIBO Secretariat since 1987
- Secretariat is currently staffed by DoD (jointly funded by Services and DND)

### Responsibilities

- Maintain all NATIBO related documentation and correspondence
- MOU details Secretariat responsibilities including keeping an inventory of all project background and foreground information exchanged between the participants



## Organization Business Development Working Group (BDWG)

- NATIBO Steering Committee created BDWG to:
  - Identify areas for collaborative activities
  - Promote and facilitate the use of the MOU for executing collaborative project arrangements
  - Assist potential users in developing and staffing the documents necessary to initiate an international project arrangement
- BDWG Points of Contact:
  - US Army rock-ecbc-natibo@army.mil
  - US Navy onrmantech@onr.navy.mil
  - US Air Force natibo@af.mil
  - USMC natibo@usmc.mil
  - OSD natibo@osd.mil
  - DND Dundas.sw@forces.gc.ca



### Information Exchange

- Includes reports, data bases
- WGs must submit list of exchanged documents to Secretariat on annual basis

### Controlled/Classified

- Controlled Unclassified: Must be marked.
   Limited to Project Information use only.
- Classified: Up to SECRET. Must comply with Department Guidelines and Procedures





### Working Groups

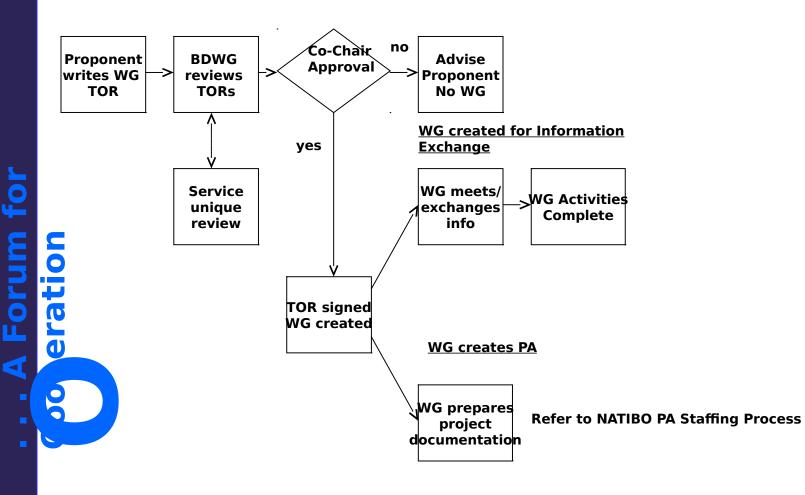
- "Sub-committees and WGs, ... may be established by the SC with concurrence of the participants. They will be established to address specific areas of concern and propose courses of action to the SC for assigned tasks"
- Require approved Terms of Reference (TOR)
- Provide annual status to Steering Committee

### Terms of Reference:

- Defines intent to work under the NATIBO MOU
- Formally establishes a Working Group
- Identifies who is involved
- Provides a scope of activity
- Outlines any specific responsibilities
- Obtains Co-Chair approval for the effort
- Format and example available on NATIBO Website



### **Overall NATIBO TOR Approval Process**





### **Current Working Groups & Date Established**



Fuel Cell Oct 2001

◆ Gas Turbine Engine IBA July 2002\*

◆ First Responder Technology Dec 2002\*

Soldier System Technology Jan 2003

Future Fire Control Systems Jan 2003

Med Support Vehicle System Mar 2003

Tactical Communication & Apr 2004\*
Info Systems Modeling

**Homeland Defense** Apr 2005

Critical Infrastructure Protection Jan 2006

\* TOR concluded, term expired





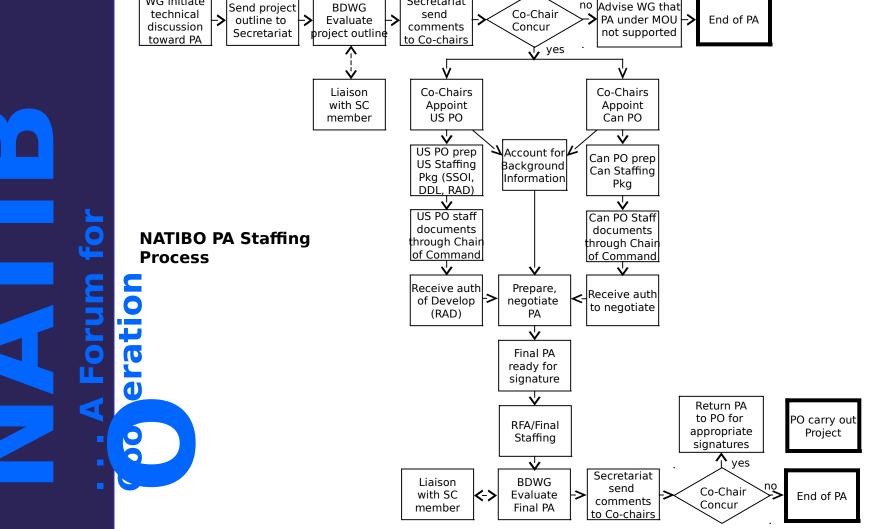
### Project Arrangements

- "Leverage resources through cost sharing and economies of scale afforded through coordinated studies and projects"
- Historically funded by mutually acceptable amounts from Services and DND
- "Each Participant will bear its equitable share of the total estimated cost of each NATIB PA and will receive an equitable share of the results, in accordance with the provisions of this MOU and the applicable NATIB PA."
  - Equitability is evaluated on a case-by-case basis
  - Equitability issues are part of the project/PA negotiation process



WG initiate

## Products & Services Memorandum of Understanding (MOLL)



Secretariat



### History

- Conceptual framework for "Technology Base Enhancement Program" initiated in 1991
- Program formalized in 1992
- Joint investment thru FY05, approx. \$10M

### Scope

- Survey North American technology and industrial base capabilities
- Analyze technology maturity and to what extent it has transitioned to a production environment
- Identify future trends/problems
- Develop roadmaps of strategic initiatives (both investment and non-investment)

### **Process**

- Originated by NATIBO (usually by BDWG)
- Sponsored by NATIBO (may require establishing a Working Group)



### **Considerations for Selection:**

- Critical to defense requirements
- Pervasive use by Services and Canadian Forces
- Commercial leverage ("Dual-use")
- Status of technology vis-à-vis international competition
- Force multiplier
- Need for government action
- Affordability of the technology
- High potential payback from minimum resources



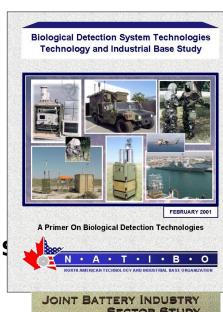
Supplier Relationships Foreign Dependency **Defined Process leads to Reports** Logistics **Production Forecasts Business Forecasts Define Team: Lead Plant Capacity** Organization, members, Technology Assessments technical expertise Financial Viability **Prepare/Define Technology** and/or Product Structure **Identify Potential Sources Select Potential Sources for On-site Visits Conduct On-site Interviews** and technology/industry Reviews **Analyze Data: Synthesize** findings, conclusion, and recommendations **Prepare Technology Base** Report w/ investment/non**investment Roadmaps** 

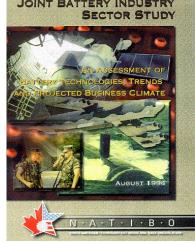


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### **Products & Services Studies and Assessments**

- 1993 Metal Matrix Composites Study
- 1994 Battery Industry Study
- 1996 Collaborative Virtual Prototyping Study
- ◆ 1996 Ion Beam Processing Study
- 1998 Corrosion Detection Technologies Study
- ◆ 1999 Rechargeable Battery Study
- 2001 Biological Detection Systems Technology Study
- 2001 Collaborative Opportunities in DMSM\$
- 2003 Small Gas Turbine Engine Study
- 2004 First Responder Technologies Study
- 2006 Fuel Cells for LAV Application
  - **2006** Cooperative Homeland Defense and
    - **Equipment for First Responders**
  - 2006 Active Protection SystemsCollaborative Point Paper (CPP)
  - 2007 Border Surveillance CPP







### Streamlined Processes

- Goal: Improve responsiveness and relevance of technology and industrial base studies by reducing lead times from historical 18 months to less than 12
- More frequent use of organic (government) resources, e.g., DMSMS and First Responder studies
- Increased NATIBO sponsoring of proposed Joint Studies, e.g., Small GTE and Battery efforts
- Adopt "Collaborative Point Paper" concept

### Resources

- Provided by participants
  - Can include funding, manpower, or information



- ◆ Goal: JUMP-START POTENTIAL COLLABORATION IN TARGETED AREAS
- Develop quick turn around product to:
  - Highlight an area of interest to the NATIBO SCM
  - Prepare short assessment of capabilities/technologies in government and industry in the US and Canada
  - Highlight value of using NATIB MOU as mechanism to initiate collaboration
  - Identify and create awareness within weapon system/technology management communities across DoD and DND
- Resource Requirements
  - 6-8 week schedule (start to finish)
  - Leverage existing resources (information & personnel) of BDWG member organizations



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## **Products & Services Advocacy Activities**

- Web site is primary communication media available to Co-Chairs
- Maintained by DUSD(AT&L)
- Completed Web site enhancements:
  - Reference sections on topics such as information exchange, NATIBO process charts
  - Links to OSD and Service International Program Offices (see next chart)
    - Highlight policies and procedures relevant to use of MOU
    - Knowledgeable points of contact
  - User's Group Area to post comments/testimonials
  - Information on other US/Canada Agreements and what's best to use when
  - Developing additional boilerplates (e.g., TOR for information exchange)



New Look in 2006 & new address







# **(1)**

## Products & Services Advocacy Activities

- Key Organizations/Sites (not inclusive)
  - DGIIP, Directorate of Continental Materiel Cooperation ( www.forces.gc.ca/admmat/dgiip/dcmc)
  - International Cooperation, OUSD(AT&L) ( www.acq.osd.mil/ic/)
  - Defense Security Cooperation Agency (www.dsca.osd.mil)
  - Defense Threat Reduction Agency (www.dtra.mil)
  - US Army Defense Exports and Cooperation ( https://usasa.army.mil/DASA DEC)
  - US Army Security Assistance Command (www.usasac.army.mil)
  - Naval Inventory Control Point, International Programs (www.navicp.navy.mil/of/ofhome)
  - Air Force Security Assistance Center (https://rock.afsac.wpafb.af.mil)
  - Deputy Under Secretary of the Air Force, International Affairs (www.safia.hq.af.mil)
  - Canadian Forces (www.airforce.forces.gc.ca , www.army.forces.gc.ca , www.navy.forces.gc.ca)



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## **Products & Services Advocacy Activities**

 Develop links between NATIBO site and Bi-National Planning Group





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## **Products & Services Advocacy Activities**

- Decision Matrix
  - Highlight "Best Vehicle" for cooperative activities
  - Provide background (possible web site links) on each

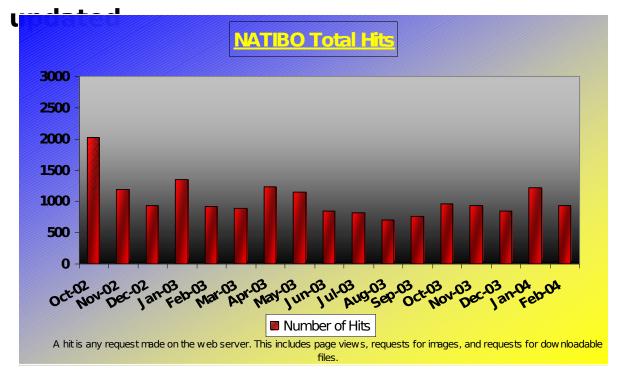
		Bilateral Defense Cooperation Tools									
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Basic Science	Prodram	<u> </u>	Piodiam	Afreemen ****						FIGHEWOIK	
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Operational Requirements											
Concept of Operations										Concept Refinement	
Project Documentation			'		<b></b> ′	<b></b> '					
Engineering Development	<u> </u>		'			<b></b>				Technology Development	
Proof of Concept/Demonstration Production and Deployment	<u> </u>		<u> </u>	<u> </u>	ļ!	<u> </u>				System Development and Demonstration  Production and Deployment	
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Commercial Applications	'					<u> </u>					
Industrial Base	<u> </u>	<u> </u>		<u></u>	<u> </u>	<u> </u>		<u>'</u>	Щ_		

<sup>\*</sup> Agreement includes also UK, AU, NZ

<sup>\*\*</sup> Primarily used by the respective Navies



- RDT&E Infrastructure Information
  - Usage has been declining
  - Looking at integrating WVa HighTech Consortium Effort (www.navytechmatch.com)
  - Will transition to TechMatch as site is





### NATIBO Conference Display

- Continue attendance at the Defense
   Manufacturing Conference (DMC) but update
   display to highlight what the MOU can do for that
   particular community
  - Update Completed
  - Presented at DMC 2006 in Nashville
  - Planning to display at DMC 2007 in Las Vegas
- Return to a few of the large Service related conferences that are heavily attended by Program Mgrs
  - Develop short promotional tool for desktop presentation



### Other Mechanisms

- DAU presentations (S&T Managers Course), updating as appropriate
- Target specific population (Project Directors and Equipment Project Managers)
- Foreign Liaison Officers (FLOs)
  - Knowledgeable assets already in-place with access to broad customer community
  - Current use of FLOs still ad-hoc, some members leverage more than others
  - Maintaining consolidated US and CA FLOs directory (place on updated web site)



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## 3 Year Plan Milestone Schedule

Activity	CY2005	CY2006	CY2007
Steering Committee Mtgs	Victoria, B.C.	San Diego, CA	Quebec City, QC
Advocacy Plan	Web-Site I	Seminar Initiative	
Potential Areas for DND/DOD Cooperation on Homeland Defense			
First Responder access to Military Equipment (Benefits & Challenges)			
Critical Infrastructure Protection (CIP)			· <u>·</u>
MOU Revision			TBD
Collaborative Point Papers (Active Protection & Border Surveillance)		Active Protection Systems	Border Surveillance Technology
Fuel Cells		For LAY	Industry IBA
Robotics Technology & Industrial Base Analysis			·



## Work Plans #1 Advocacy Plan

### Requirement

- Generate interest among program managers and project engineers in using the NATIB MOU for collaborative efforts
- Provide "How To" Information to potential MOU Customers

### Expected End Item

- Upgraded Web-Site (Completed)
  - Expanded Information on leveraging NATIBO products
  - Improved MOU tools & instructions
  - Relevant links to DoD and DND International Program Offices
- Seminar Program for DoD/DND International Program Officers
  - Develop Curriculum
  - Identify Audience & Locations Want to educate the "gate keepers" that advise program managers on establishing international efforts

### Resources

- DTIC and DUSD(AT&L) supported Web-Site changes
- BDWG initiate Seminar effort

### **Key Milestones**

Web-Site Redesign: June 2005 to Dec 2005, Launched Feb 2006 Schedule first Seminar: May 2007



### #2 Potential Areas for DND/DoD Cooperation on Homeland Defense

### Requirement

- Review Cooperative Homeland Defense Initiatives
- Focus on Technology, Acquisition and Logistics efforts (excludes CBRNE and Major Weapon Systems)
- Tied to DoD/DND roles in Civil Support and Aid to Civil Power
- Identify Gaps and Develop Recommendations

### Expected End Item

- Presentation outlining process and findings
- Action Plans for Recommendations

### Resources

- DND: DGIIP & ADCA
- DoD: ASD(HD), AF & Army

- Develop TOR for HD Working Group (signed April 2005)
- Jan 2005: Kick-Off Study
  - Jun 2005: Brief Preliminary Findings at SCM
  - May 2006: Release Final Report





### #3 First Responder Access to Military Equipment

### Requirement

- Identify military equipment of use to First Responders in various emergencies
- Assess current availability and location of identified equipment
- Identify constraints/barriers to issue and movement of equipment (both domestically and cross-border)

### Expected End Item

- Presentation outlining process and findings
- Detailed Report
- Recommendations with Action Plans

### Resources

- DND: DGIIP and ADCA

DoD: ASD(HD), AF & Army

### **Key Milestones**

- Jan 2005: Develop Resource Strategy

Jun 2005: Brief Preliminary Findings at SCM

May 2006: Release Final Report





### **#4 Critical Infrastructure Protection (CIP)**

### Requirement

- Identify critical components of the Defense Industrial Base in both the US and Canada
- Conduct Vulnerability Analyses at selected sites

### Expected End Item

- Presentation outlining process and findings
- Detailed Report
- Recommendations with Action Plans

### Resources

DND: DGIIP and ADCA

DoD: ASD(HD), OUSD (AT&L), DCMA, AF & Army

### **Key Milestones**

Dec 2005: Develop Resource Strategy

Jun 2006: Brief Preliminary Findings at SCM

May 2007: Release Final Report



### **#5 MOU Revision/Amendment**

### Requirement

- Review the NATIBO MOU for Amendment
- Include U.S. export control-related language, once finalized
- Add other improvements as required (e.g. Project Equipment Transfer (PET))

### Expected End Item

 Revised MOU with new export control-related language and other improvements once final export control text is agreed to

### Resources

DND: DGIIP

DoD: OUSD(AT&L)

### **Key Milestones**

- August 2005: Establish Ad Hoc MOU Review Group

Jun 2006: Provide MOU Review Group feedback at next SCM

2007: Negotiate MOU Amendment and Finalize Changes



## #6 Collaborative Point Papers Active Protection & Border Surveillance Technology

### Requirement

- Identify Technology/Industrial Base areas of interest to both DoD and DND
- Rapidly assess government and commercial capabilities
- Distribute assessment to key stakeholders with information on NATIBO to promote collaborative projects

### Expected End Item

- Collaborative Point Paper
- Customer(s): Canada COM, USNORTHCOM, OSD(AT&L), Services, DHS

### Resources

- DoD: Service & Agency Industrial Base Data & Information
- DND: DGIIP

- 2nd Qtr CY 2006: Developed CPP Template
- Sep-Oct06: Performed assessment of Active Protection Systems based on discussions at Jun06 SCM, distributed CPP
  - Mar-May07: Performed assessment of Border Surveillance Technology



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### Work Plans #7 Fuel Cells

### Requirement

- Increased Military Importance of Fuel Cells
- Evaluate capabilities of the North American Industrial Base for Fuel Cells. The focus will include Mobile Power Applications. The Study will identify what's available in both commercial and military markets and include technology and production capabilities. The scope will encompass vehicle applications including Silent Watch, Auxiliary Power Units, On-Board Vehicle Power, Propulsion, Specialty Vehicles (forklifts, etc.) and automobiles/buses/trucks.

### Expected End Item

- Production capability, capacity, TRL and MRL assessment of North American Companies
- Customer (s): OSD, DND, Services

### Resources

- DoD/DND: DCMA IAC & DGIIP
- Advisors : ODUSD AS&C (OTT), DUSD/IP & JDMTP Power Sources TWG

### **Potential Customers**

Customer(s): OSD, DND, Services

### **Technologies of Interest**

- PEM, Solid Oxide and other type Fuel Cells, JP-8 Fuel Reformers

- 1st 2nd Qtr CY 2006: Analyzed Hydrogenic's capabilities/TARDEC rqts., developed and submitted final report **Completed**
- 1st Qtr CY 2007: Initiated planning for industry survey of North American Companies
- 4th Qtr CY 2007: perform site visits, draft Phase II report Complete draft Industrial Base study, finalize report



### Work Plans #8 Robotics

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### Requirement

- Increased Military use of Robotics (land, air and sea applications)
- Joint Service, DND interest
- Technology and Industrial base activities in both countries

### Expected End Item

- Identification of collaborative development and industrial partnering
- Customer(s): OSD, DND, Services

### Resources

- DoD: DCMA IAC, ODUSD AS&C OTT, SPAWAR
- DND: DGIIP, DRDC

- 3rd Qtr CY 2007: Prepare ToR and establish Working Group
- 3<sup>rd</sup> Qtr CY 2007: Develop study plan, Initiate assessment
- Complete study: TBD



### Measures of Success

### Memorandum of Understanding

- Number of Working Groups/TORs in Place
- Number of NATIB PAs Executed/\$ associated with Pas
- Number of PAs on other vehicles initiated by NATIB Working Groups
- Approval Cycle Times
- Number of projects successfully taken to completion
- New Project Starts
- Benefits to Government/Industry

### Studies & Assessments

- Time to Initiate and Complete
- Number of recommendations acted on
- Number of new studies/assessments initiated
- Benefits to Government/Industry

### Advocacy

- Web Site Activity
  - Attendance at Display
  - \*Blue font denotes information all ready collected



### Summary

- Proposed Business Plan represents an incremental approach to increasing NATIBO visibility in DoD and DND
- Business Plan reflects small to moderate increase in resources
- Emphasizes a focus on North American Security/Defense
  - Overall Goal is for NATIBO to provide increased value to the defense of both countries

